DOCUMENT RESUME

ED 420 785 CE 076 751

AUTHOR Cullen, R. B.
TITLE Workskills and National Competitiveness: A Benchmarking Framework. Report No. 1: Benchmarking Australian Qualification Profiles.
INSTITUTION Performance Management Solutions Pty. Ltd., Hawthorn, Victoria (Australia).
SPONS AGENCY Australian National Training Authority, Brisbane.
ISBN ISBN-0-642-25392-7
PUB DATE 1997-03-00
NOTE 26p.; For report no. 2, see CE 076 752.
AVAILABLE FROM Australian National Training Authority, AMP Place, 10 Eagle St., Brisbane, Queensland 4001, Australia.
PUB TYPE Reports - Research (143)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Benchmarking; Change Strategies; Check Lists; Comparative Analysis; *Competition; *Education Work Relationship; Educational Change; Educational Economics; Educational Improvement; Educational Needs; Educational Planning; Educational Policy; *Employment Qualifications; Foreign Countries; Human Capital; Job Skills; Job Training; *Labor Force Development; Policy Formation; Postsecondary Education; *Vocational Education
IDENTIFIERS Australia

ABSTRACT

A recent study of work skill competitiveness and overall national competitiveness worldwide revealed that 17 countries are more competitive than Australia. Some countries have a relative resource advantage and will be able to extend access to education and training more effectively than Australia will, and some countries have targeted education and training to the emerging needs of their industry base more successfully than Australia has. Analysis of the links between education and training and industry is distorted by a focus on the supply side of the education and training work skills equation. Strategic benchmarking is a process of comparative analysis, target setting, and action designed to focus on continuous improvement. In the case of work skills, benchmarking requires the following: identification of profile gaps, selection of gaps that appear to be linked to industry performance, and development of action strategies to close selected gaps. A framework for comparative evaluation of education and training reform across countries and regions has been developed that focuses on employment outcomes and industry performance and includes questions examining external benchmarks (to address the reality that education and training reform and industry reform are occurring in many countries) and internal benchmarks (to address internal processes). (MN)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 420 785

REPORT NO. 1:
BENCHMARKING AUSTRALIAN
QUALIFICATION PROFILES

WORKSKILLS AND NATIONAL COMPETITIVENESS: A BENCHMARKING FRAMEWORK

AUSTRALIAN
NATIONAL TRAINING
AUTHORITY

By R. B. Cullen

A Project conducted by Performance Management Solutions for the Australian National Training Authority

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

March 1997

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
C Dunk
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

CE076 751

REPORT NO. 1:
BENCHMARKING AUSTRALIAN
QUALIFICATION PROFILES

WORKSKILLS AND NATIONAL COMPETITIVENESS: A BENCHMARKING FRAMEWORK

AUSTRALIAN
NATIONAL TRAINING
AUTHORITY

By R. B. Cullen

A Project conducted by Performance Management Solutions for the
Australian National Training Authority

March 1997

Performance Management Solutions Pty. Ltd. A.C.N. 060395600, 512 Glenferrie Road, Hawthorn, Victoria, Australia 3122. Tel/Fax : (03) 9818 3092.

Consultants on Public Sector Management.

Performance Management Solutions aims to assist public sector organisations and other organisations with complex service objectives to improve performance, particularly the grass roots delivery of services to the public, by providing a series of targeted and cost-effective management products and services.

The PMS evaluation methodology supports a number of products, all keyed to the core performance needs of programs or organisations. Products include: Performance Audit; Performance Improvement Planning; Benchmarking for Continuous Improvement; Strategic Research and Information Services; Results-based Resource Planning and Review; Organisational Diagnostics and Design; and Performance Management Staffing Systems

Copyright: Performance Management Solutions 1997

Enquiries should be directed to:

Australian National Training Authority
AMP Place, 10 Eagle Street, Brisbane, Queensland 4001
Ph: (07) 3246 2300 Fax: (07) 3246 2490
http://www.anta.gov.au

©Australian National Training Authority, 1997
ISBN 0 642 25392 7

SECTION ONE: INTRODUCTION

SECTION TWO: EDUCATION AND TRAINING REFORM AND NATIONAL COMPETITIVENESS

SECTION THREE: CREATING WORLD COMPETITIVE WORKSKILLS

SECTION FOUR: BENCHMARKING PROCESSES FOR ONGOING IMPROVEMENT

SECTION FIVE: AN AGENDA FOR IMPROVEMENT

SECTION ONE: INTRODUCTION

Reform of the world's education and training systems is gathering momentum, fuelled by expectations that mass access to post-secondary education and training will lead to growth in employment, add value to national competitiveness, and add value to individuals who gain post-secondary qualifications. The move to mass post secondary education and training is accompanied by industry reform as industry restructures to respond to the globalization of world markets and production.

Whether expanded qualifications add value to industry competitiveness or are little more than a reordering of the employment (or unemployment) queues in each country depends upon two factors: first, the strategic fit between the priorities of education and training reform and industry; and second, the capacity of industry to extract competitive value from the new skills which are being developed. Two key questions must be addressed: first, are the planning and market-driven triggers which change education and training priorities able to address changes in the core skills required by industry; and, second, is the mix of management and technology in industry able to utilise and generate competitive advantage from the new skills developed by the education and training system? As the rate of change increases and the scope for change moves from incremental or linear change to discontinuous or non linear change, the strategic fit between the emerging needs of industry and the priorities of the education and training system becomes more difficult to maintain.

Four propositions suggest different links between education and training and national competitiveness which can be tested as part of any overall analysis. The first proposition is that those with training will be preferred for employment over those without. The second proposition is that a trained national or regional workforce will induce industry managers to move employment into a nation or region rather than away from it. The third proposition is that the supply of enhanced workskills will create a demand for these skills as industry moves to exploit new workskills. The fourth proposition is that the market for access to education and training and the market for the employment of persons with qualifications will act to align the priorities of education and training reform and the future needs of industry. Alignment needs to reflect skill priorities, cycle times, and the cost-effectiveness to business of education and training. None of these propositions can be presumed and each proposition needs to be tested as part of any evaluation of the competitive impact of education and training reform.

This Report, by analysing the changing qualification profiles of those in employment, examines links between the performance of education and training in Australia and national competitiveness. The Report develops frameworks which can be used to benchmark Australian qualification profiles.

Strategic benchmarking involves: comparative analysis of processes and outcomes; selection of strategic changes which offer scope to improve industry competitiveness; identification and implementation of enabling strategies which translate these changes into action; and evaluation of future changes. Benchmarking is particularly useful where change is internally or process driven, where traditional processes need to be linked to changing external realities, and where cycle-time mismatch is a blockage to effective response.

Section Two examines the changes underway in both the education and training and industry systems and identifies links between education and training reform and national competitiveness. Section Three examines the processes involved in creating world-

competitive workskills and outlines a benchmarking and evaluation framework which can be used to focus ongoing improvement. Section Four examines the benchmarking of ongoing improvements and discusses key issues which need to be addressed. Section Five examines specific issues likely to impact on Australian competitiveness and presents a checklist to guide ongoing evaluation and improvement processes.

SECTION TWO: EDUCATION AND TRAINING REFORM AND NATIONAL COMPETITIVENESS

The general correlation between measures of workskill competitiveness and overall national competitiveness

Although Australia has generated growth in Degree and VET profiles in recent years, other countries are also delivering a more highly qualified workforce.

- Some counties have a relative resource advantage and will be able to extend access to education and training more effectively than Australia.

- Some countries h .ve targeted education and training to the emerging needs of their industry base more successfully than Australia.

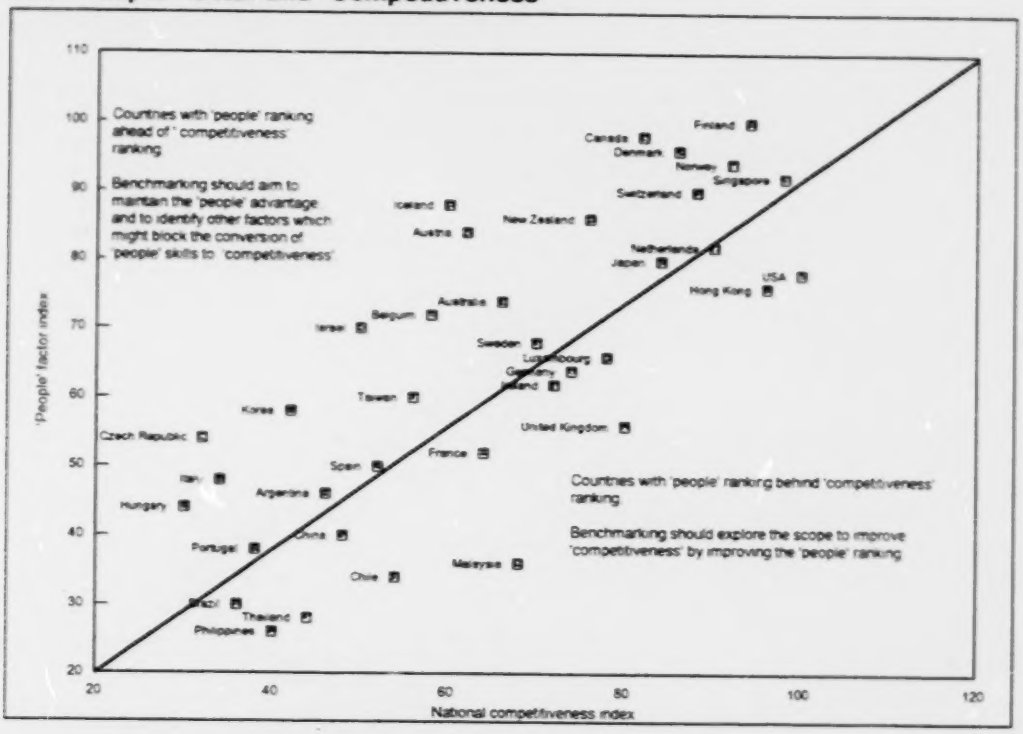
- Translating workskills into competitive advantage also requires improvements in other variables such as 'management', 'science and technology', and 'internationalisation'.

The World Competitiveness Yearbook aggregates many measures into eight broad factors. *Exhibit 2.1: World Competitiveness Benchmarks* examines the relationship between 'competitiveness' and the 'people' factors used by the World Competitiveness Yearbook. Exhibit 2.1 also lists the difference between competitiveness rankings and factor rankings for each of the 17 countries assessed as more competitive than Australia. For each country, these differences provide a measure of whether a factor is likely to act as a driver or a restraint to competitiveness.

Exhibit 2.2: Australian Competitiveness Rankings 1994 - 1997 details shifts in both overall competitiveness and factor rankings for Australia between 1994 and 1997.

Exhibit 2.1: World Competitiveness Benchmarks

The "People" factor and "Competitiveness'



Source: Rankings from The World Competitiveness Yearbook 1997. Lausanne, Switzerland: IMD, 1997.
Rankings for overall 'competitiveness' and for the 'people' factor converted to an index 1-100 (Index = (51-Rank)/50*100)
Analysis: Performance Management Solutions, 1997.

Competitiveness Ranking Less Factor Ranking

Base Competitiveness Ranking	Domestic Economic Strength	International -ization	Government	Finance	Infrastructure	Management	Science & Technology	People
1 USA	0	0	-6	0	0	-2	0	-11
2 Singapore	-1	0	1	-4	-9	1	-6	-3
3 Hong Kong	-6	0	1	-9	-16	1	-15	-10
4 Finland	-19	-9	-11	-9	1	-4	-2	3
5 Norway	-3	-18	-8	-6	3	-8	-6	1
6 Netherlands	-10	0	-16	4	-6	2	-6	-4
7 Switzerland	-25	-19	2	4	-2	-2	2	1
8 Denmark	-10	-1	-15	4	3	3	-15	5
9 Japan	3	-23	-19	4	-11	2	7	-2
10 Canada	-11	-9	1	0	4	0	1	8
11 United Kingdom	-8	7	3	3	-5	-3	-3	-12
12 Luxembourg	8	7	-12	5	-5	-4	-5	-6
13 New Zealand	-21	-9	10	-2	0	2	-3	5
14 Germany	-12	7	-11	5	7	-11	11	-5
15 Ireland	10	3	3	-5	-7	3	8	-5
16 Sweden	-15	5	-22	2	12	10	-5	-1
17 Malaysia	15	0	13	-2	-10	0	-8	-16
18 Australia	-4	-10	4	0	10	-1	-6	4

Factors are those measured by The World Competitiveness Yearbook 1997. A negative figure represents a potential restraint on competitiveness (factor competitiveness lower than the overall competitiveness.) A positive figure represents a potential driver for competitiveness (factor competitiveness higher than national competitiveness.)

r2ger24 Copyright PMS 1997

Table 2.1: Australian Competitiveness Rankings 1994 -1997

	Ranking			Improve -ment in ranking	Factor ranking relative to competitiveness ranking		
	1994	1996	1997	1994-1997	1994	1996	1997
OVERALL COMPETITIVENESS	16	21	18	-2	+0	+0	+0
Management	23	25	19	+4	-7	-4	+1
Science & technology	16	21	24	-8	-0	0	-6
People	**19**	**18**	**14**	+5	**-3**	**+3**	**+4**
Internationalization	26	29	28	-2	-10	-8	-10
Finance	14	15	18	-4	+2	+6	0
Government	12	13	14	-2	+4	+8	+4
Domestic economic strength	18	18	22	-4	-2	+3	-4
Infrastructure	5	6	8	-3	+11	+15	+10

Note: Although the 'people' factor is broader than 'workskills', it contains workskill elements, and is used here to simplify comparisons with other rankings.

Australia has a higher ranking on 'people' (workskills) than on other variables, such as 'management', 'science and technology', and 'internationalization'.

Source: Factor rankings from The World Competitiveness Yearbook 1997. Lausanne, Switzerland: IMD, 1997.
Analysis: Performance Management Solutions, 1997.

Copyright PMS 1997

The translation of workskills into competitiveness involves other management and system variables.

'People' (workskills) combine with other industry-based variables, such as 'management' and 'science and technology', and with system-based variables, such as 'government', 'infrastructure', 'finance', 'internationalization' (access to international markets) and 'domestic economic strength' (access to domestic markets) to create 'national competitiveness'.

Given the importance of 'management', 'technology' and 'workskills' to the business process, it is reasonable to assume that each of these variables is a prerequisite to industry competitiveness and that a nation seeking to optimise industry competitiveness should seek to optimise each of these variables. These management factors combine with other internal factors (such as 'effectiveness of the financial system', 'competitiveness of government and infrastructure' and 'access to domestic markets') and with external factors (such as 'access to world markets') to produce national competitiveness.

Major discontinuities are impacting on the workskill-competitiveness translation

The processes used to align the priorities of education and training and industry rely on incremental adjustments and extended cycle times. These processes are unlikely to respond effectively to rapid and discontinuous change. Yet, to be effective, there are a number of discontinuities which the current changes must address.

The first discontinuity involves the knowledge business itself. The education and training structures and curriculum frameworks required to optimise workvalue are changing. Traditional assumptions about knowledge and its application may no longer be the most competitive way to add value in the workplace or to ensure future development and improvement of the knowledge base.

In the emerging global factory, employment tends to move to nations and regions able to deliver cost-effective workskills. Increasingly, base level skills are inadequate to access changing technologies. *Exhibit 2.3: Workskills and Workvalue* suggests that strategies which separate knowledge and ideas from their application are becoming less viable. The boundaries are merging. In addition, the half life of skills is shrinking. The gap between the knowledge of new entrants and older members of the workforce is expanding. Workskills which do not provide a bridge for future learning and adaption are of reducing value to both individuals and industry. The link between value and skills involves a convergence of knowledge and ideas, the operationalisation of ideas and the capacity for ongoing learning and development.

Exhibit 2.3: Workskills and Workvalue

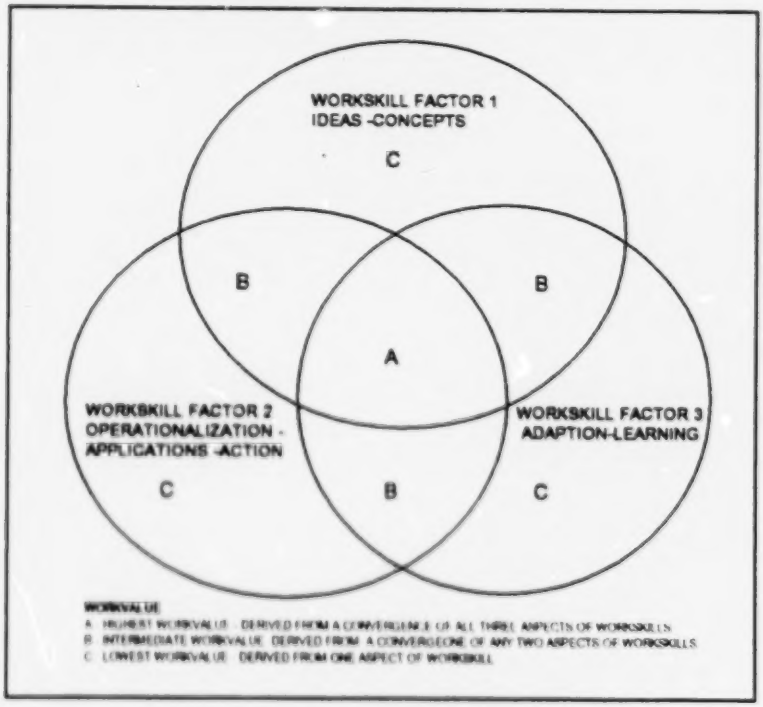


Exhibit 2.3 identifies three levels of increasing workvalue.

(a) Highest workvalue, derived from a convergence of all three aspects of knowledge.

(b) Intermediate workvalue, derived from overlapping any two of the components.

(c) Lowest workvalue, derived from each component of knowledge separately.

The second discontinuity involves the impact of competition; this has clear implications for the systems which seek to deliver competitive workskills. There are two different impacts which might be considered.

First, limited competition models, which presume that national boundaries and regulations can be used to redefine the scope for competition and refocus the competitive challenge to one of sub-optimisation within such constraints, seem increasingly unrealistic. Old notions of regulation and restricted competition are no longer viable in an increasingly global business environment. For example, labour market practices which restrict employment or which seek to link pay to skills rather than performance are being bypassed as the global factory makes decisions about the location of production and the sources of labour.

Second, globalization means that it is no longer enough to improve education and training. If most countries are reforming post-secondary education, then progress is not enough to ensure competitiveness. To gain a competitive edge, a nation needs to produce competitive qualifications and to be first to exploit these skills in the market place. The identification and implementation of change strategies to enable skills to be exploited first requires benchmarks which address both priorities and the need to reduce the response time of the education and training system.

SECTION THREE: CREATING WORLD COMPETITIVE WORKSKILLS

Supply-side vs. demand-side priorities

Discussion and analysis of the links between education and training and industry are distorted by a focus on the supply side of the education and training workskills equation. The supply- and demand-side perspectives are summarised in *Exhibit 3.1: Supply and Demand for Workskills.*

The supply side is dominated by structures which focus on students, institutions and qualifications. The supply side focuses on access, unit costs, resources, teaching standards and costs, and sometimes the employability of those with qualifications. The objective is to access funds and potential students. The focus for change is long-term rather than short-term. The short term agenda is set by existing institutions and students and their needs. Notions of market forces and demand tend to be applied to applications by students for places - an input to the supply side of the workskill equation. Outcomes are usually completion rates. To the extent that monitoring focuses on the population, the focus tends to be on access and the progression of age cohorts. Some analyses add qualification per head of population; however, comparisons of education and training enrolments and the stock of qualified persons are complicated by the time lag between enrolment and entry to the workforce and by the time

EXHIBIT 3.1: SUPPLY AND DEMAND FOR WORKSKILLS

SUPPLY SIDE FOCUS

Access to programs, unmet demand for places, impact on governments and institutions

Generalised competencies and knowledge to prepare for or complement work based knowledge

Technology base

Entry level training

College based training

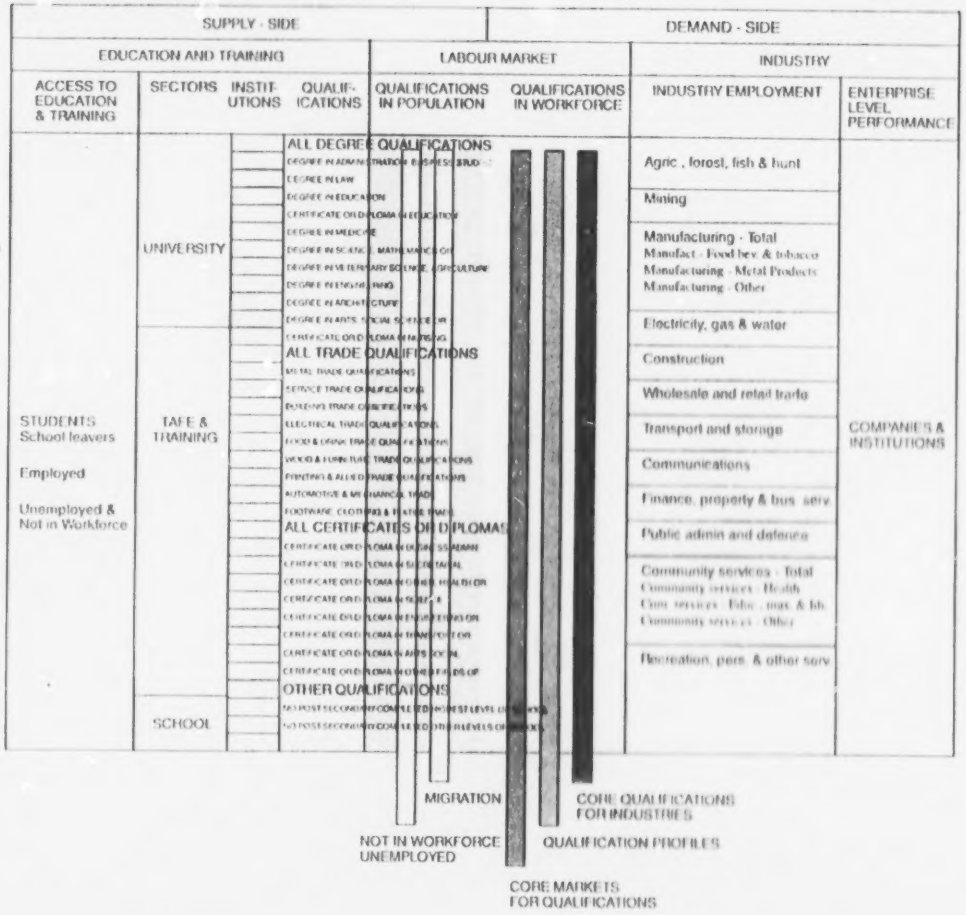
General management skills

Effectiveness measured in terms of costs and benefits for education and training providers

Employment of recent graduates

RPL as a means of providing credit into entry level programs where the required education prerequisites can be demonstrated

Standards and assessment as a means of maintaining program quality and status



DEMAND SIDE FOCUS

Skill blockages that impact on production

Operationalisation of generalised skills to meet the needs of specific businesses

Technology and technology transfer, in the context of each sector and enterprise

Upgrading the skills of the existing workforce

Work based training

Management in the context of each enterprise

Effectiveness of training measured in terms of the costs and benefits for each business

The qualification (and skill) profile of the enterprise workforce

RPL as a means of reducing training times and costs and recognising operational skills

Standards and assessment as a means of recognising industry training and of ensuring that college delivered programs address industry needs

lag required for changes in employment to generate significant shifts in the qualification profile.

The demand side is dominated by structures which focus on enterprises, industries, and employment needs. Analysis focuses on the entire workforce. The focus is on short term competitiveness. Workskill development involves: recruitment to replace those exiting the workforce; recruitment to resource growth and change; and training to develop the skills of those already in the workforce. The focus of analysis is total employment. The focus of planning is relatively short-term. The demand-side of the equation focuses on the demand by industry to employ persons with qualifications. The focus is on: competitive needs; cost-effective production; and the identification of shortfalls and strategies for overcoming them. The assumption is that long term solutions will either emerge or be met by short term adaption strategies.

Communication between business and the education and training system can be altered by bypassing some of the restrictions imposed by demand- and supply-side frameworks.

Traditional approaches to the management of the education and training systems are dominated by supply-side measures. A focus on employment and qualification profiles can correct this distortion. Employment can be translated to industry and enterprises, whereas 'qualifications completed' or 'qualifications in the population' cannot. Qualification employment profiles are the percentage of the workforce in an enterprise, industry or nation which holds particular qualifications.

In developing benchmarks, it is useful to concentrate on industry employment qualification profiles. This does not mean that other supply-side benchmarks have no value as part of an improvement focus, but it does imply that they should be subordinated to employment outcomes and industry performance.

Three points can be drawn from this analysis

- If the objective of education and training reform is to increase industry competitiveness, evaluation needs to shift from school leavers and new entrants to the entire workforce. The next level of segmentation should not be education and training institutions but industries or key enterprises. The focus needs to shift away from all education and training to the key skills required by each industry.

- Nevertheless, in examining links between the supply and demand for qualifications in the workforce, time lags can be reduced by considering the qualifications of the Age 25-34 component of the total workforce.

- Links between workskills and competitiveness develop from the demand rather than the supply side of the equation. The links between the demand and supply side of the workskill equation are the markets for skills. In examining the market for qualifications, three measures are relevant: the qualification profile; the core market for qualifications; and the core qualifications used by each industry or enterprise. In examining the strategic fit between the supply and demand sides of the workskill system, it is important to recognise that blockages caused by cycle time mismatch are a problem and to re-engineer processes to bring the cycle times together. This requires: increased flexibility to reallocate priorities within the education and training

system, and an extension of industry planning to identify future needs and competitive workskill opportunities earlier than competitors.

Workskill Planning and Evaluation

Workskills are the link between performance of the education and training system and industry. Industry recruits employees with skills to resource growth, to replace those leaving the workforce, and to resource workforce renewal objectives. The labour market offers a wide range of experience and workskills. Some are younger persons who have recently completed qualifications. Others are experienced persons with both qualifications and experience which companies see as adding value to competitiveness.

A feature of workskill development is the need to operationalise ideas and concepts and to apply them to specific business situations. To meet this need, companies seek recruits with core competencies and a capacity to learn. A second feature is the need for regular upgrades of skills. Although many in-house skills are not accredited, they form an important part of the competitive skill base of many companies. Benchmarks which focus on highest levels of qualifications also need to address non-accredited skills. Finally, for many enterprises, the use of recruitment to access new skills opens up a gap between the skills of new recruits and the existing employment base. This gap, measured in terms of a qualification gap, continues to increase. A key strategy for skills development is to contain this gap and to build on the strengths of the entire workforce.

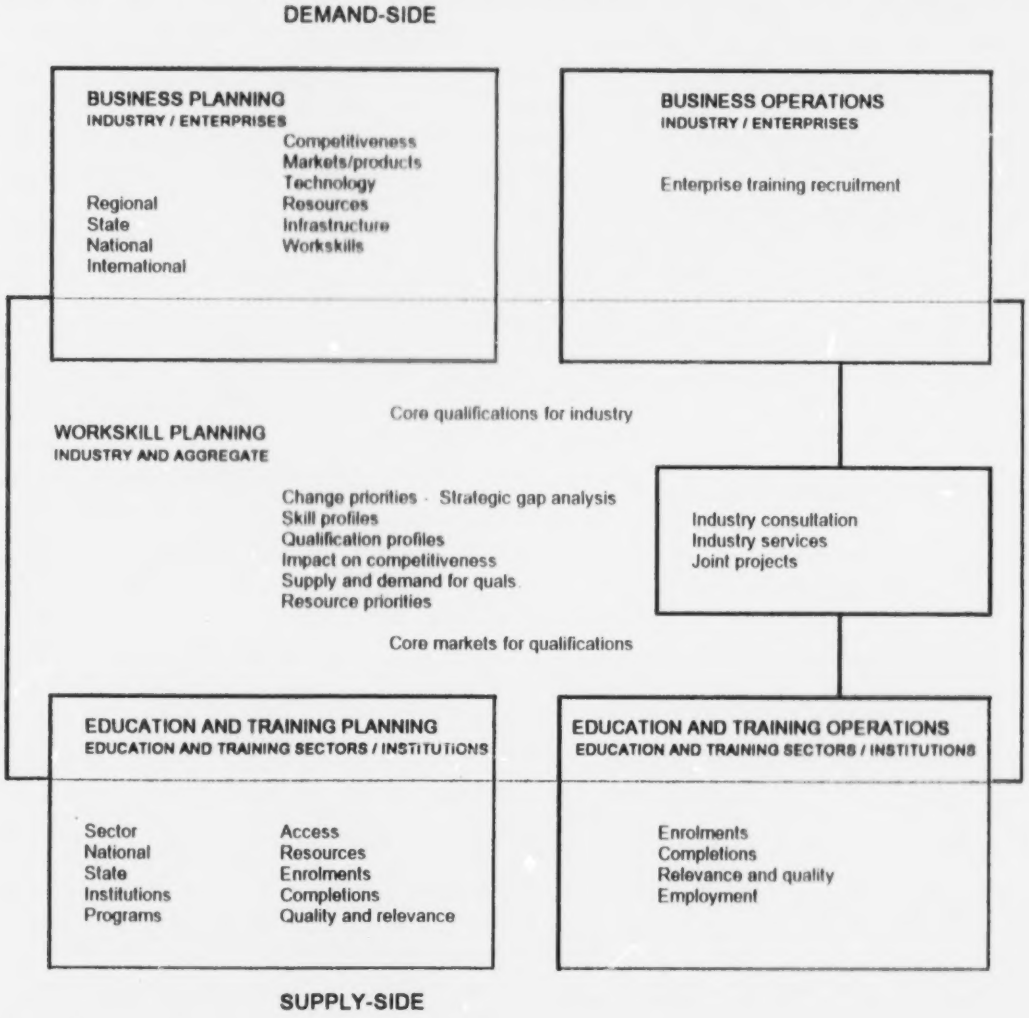
Key evaluation factors include 'employment profiles', 'core markets for qualifications' and 'core qualifications for industry'. Evaluation needs to be segmented by industry and age. Industry segmentation addresses major differences between industries. Age segmentation addresses the need to focus on the total employment base and on the need to analyse the gap between younger and older members of the workforce. A major issue for workskill evaluation is the lead time between supply-side outcomes and shifts in the total employment base.

The analysis addresses this need by projecting future employment demand for qualifications on the basis of: the profile age gap; industry employment trends; and assumptions about workskill replacement needs. A comparison of future projections of employment needs with existing supply-side resources and priorities is the most useful way to test for major gaps in the supply and demand systems. This can be supported by shorter term measures of gaps and employment destinations.

Labour market frameworks are subject to various planning and evaluation pressures. *Exhibit 3.2: Building a Competitive Workforce: An Industry Focused Planning Model* outlines the planning and evaluation pressures which influence the demand side, the supply side, and the labour market segments shown in Exhibit 3.1.

The demand side is driven by business planning and operational pressures. The key focus for evaluation in business competitiveness. Subordinate variables include management competitiveness, technological competitiveness, market competitiveness (access and products), resource competitiveness, government infrastructure and charges competitiveness, and workskill competitiveness. The skill development process involves recruitment, training, and staff replacement strategies which match workskills to emerging needs and create a source of competitive strength for each enterprise.

EXHIBIT 3.2: BUILDING A COMPETITIVE WORKFORCE: AN INDUSTRY FOCUSED PLANNING MODEL



FOCUS FOR EVALUATION

INDUSTRY

International, national benchmarks for
Industry competitiveness
Skill competitiveness

INDUSTRY

Gaps between industry and education and training priorities

Actual compared with projections of employment and profiles

Actual compared with other States

Industry evaluation of change projects

EDUCATION AND TRAINING SECTORS

International, national benchmarks for resources, qualifications, quality.

Industry evaluation or relevance and quality

Access, completions, unit costs

Special initiatives

The supply side is restrained by regulatory and resource allocation frameworks and driven by demand from students, from trade and professional groups, and from business. While there are options to decentralise resource allocation and to link it more directly to individual student and industry needs, the focus remains input-driven. The skill development process: starts with funding for an institution which enables the institution to attract a student; moves to the completion of a qualification by that student; and ends with the individual using these skills in employment.

Highest qualifications are a partial measure of workskills. Other uncredentialed skills which are keys to competitiveness need to be included in the evaluation process.

The key to linking planning and evaluation from the demand- and supply-sides of the workskills creation system is not to abandon or convert existing business or education and training planning systems, but to add workskill planning and evaluation as a means of linking the two systems.

SECTION FOUR: BENCHMARKING PROCESSES FOR ONGOING IMPROVEMENT

The value chain which translates education and training changes into national competitiveness is outlined in *Exhibit 4.1: The Education and Training - Industry Competitiveness Value Chain.* Strategic benchmarking is a process of comparative analysis, target setting, and action designed to focus on continuous improvement. In the case of workskills, the benchmarking process requires: identification of profile gaps; selection of gaps which appear to be linked to industry performance; and development of action strategies to close selected gaps.

The enabling strategies required to close selected gaps must address a number of blockages in the value chain which reduce the capacity of education and training institutions and industry to implement change.

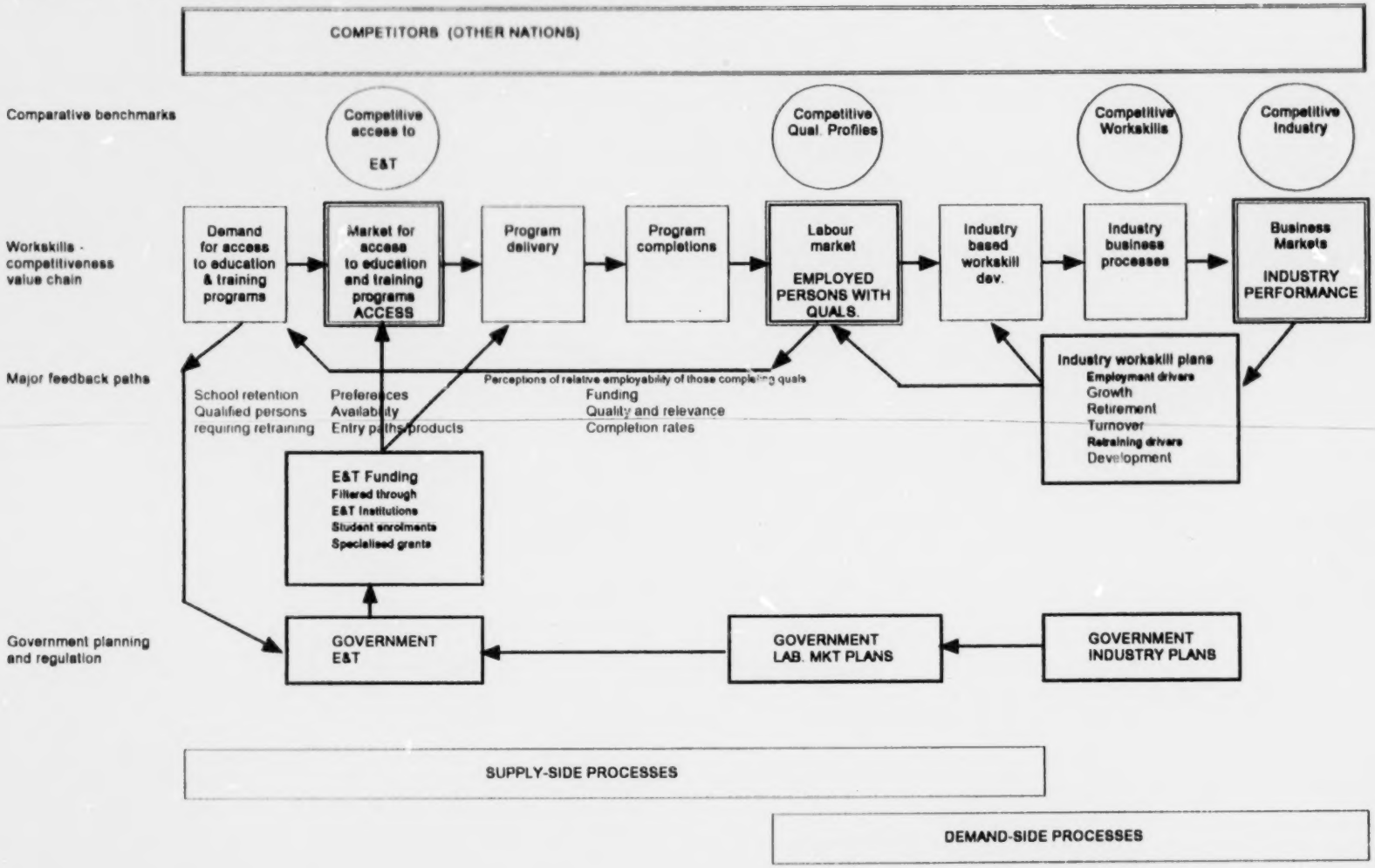
Improving Workskill Competitiveness Through Strategic Benchmarking

Improving the performance of the education and training system is best guided by benchmarks and related change processes which, together, can bypass existing system-driven inertia. Two groups of benchmarks are required; first, benchmarks which address international competitors; second, benchmarks which address internal differences and trends.

External benchmarks compare Australia with other countries. The key challenges in the development of such benchmarks are: the weakness of international comparisons of competitiveness and qualifications; and the need to address future competitiveness in a way which recognises that most countries are reforming education and training and restructuring industry priorities.

Internal benchmarks: comparison of Australia's qualification profiles over time; a focus on differences between States and industries; and identification of strategic opportunities to enhance competitiveness by altering education and training supply and demand priorities. Internal benchmarks need to address the supply-side differences in access and resources.

EXHIBIT 4.1: THE EDUCATION AND TRAINING - INDUSTRY COMPETITIVENESS VALUE CHAIN



R1 - 13

Key difficulties are the presumptions: that resource utilisation is equally effective across education and training sectors and regions; that similar qualifications 'titles' reflect similar skill standards; and that, between regions and industries, enterprises are equally competitive and able to manage change.

Removing blockages to successful response

The value chain analysis outlined in Exhibit 4.1 explains why cycle times are extended and offers some ideas for accelerating the adjustment process.

Supply-side priorities tend to be set by a combination of government and institutional planning and student preferences. Planning frameworks tend to focus on areas of consensus and on the interests of education and training systems and institutions, rather than on the need for strategic change. Student preferences tend to be driven by past characteristics of employment markets and by the choices offered.

When gaps become apparent, either through benchmarking or employment shortfalls, the education and training system experiences difficulty reallocating resources and curricula to address new needs. The resource allocation problem is influenced by sunk resources and by planning systems and budgets which underfund discretionary change. Curricula changes are influenced by quality control processes which seek to define and evaluate changes in detail before they can be offered and funded.

The discontinuities discussed above, combined with traditional approaches to the structure and regulation of both business and education and training, present blockages which need to be monitored and, where necessary, removed. Blockages can either stop critical changes or, alternatively, slow down reform to the point where the response has no real competitive value.

The systems for ordering education and training priorities in most countries are distorting change priorities and the operation of market forces. Although supply-side factors drive most education and training reform, they are not enough to ensure competitiveness, Supply-side sector and institutional structures act to create resource and curriculum paralysis. Although the demand side of the labour market generally seeks to correct these problems, the correction is often distorted by three different factors: by the slow response capacity on the supply side; by the long lead time between enrolments and employment; and by demand-side distortions which alter the links between workskills and competitiveness.

SECTION FIVE: AN AGENDA FOR IMPROVEMENT

A framework for managing ongoing improvement

This Report develops a framework for managing ongoing strategic improvements to national workskills. The links between education and training reform and national competitiveness are critical to meeting the expectations of individuals and of industry and business. Yet the regulatory and adjustment processes which control education and training will not automatically close the strategic gaps between the needs of business and the desires of students and education and training institutions.

Exhibit 5.1: A Framework for the Comparative Evaluation of education and training Reform Across Countries and Regions (Page 1/3)

Is industry increasing its competitiveness?
Are key industries world competitive? Have industries increased competitiveness relative to other countries/regions? Is competitiveness translating into national/regional wealth and jobs?

- Has the world competitiveness ranking improved?
- What key factors are likely to drive and restrain competitiveness?
- To what extent are workskill priorities integrated with competitiveness priorities?

Are workskills a source of national competitive advantage?
Is the workskill creation process a source of competitive advantage compared with other countries? How might this advantage be increased? Has the education and training system combined with industries to add competitive value to workskills, as well as reordering the employment queues?

- Are the workskill requirements of key industries world competitive? Are workforce skills generally competitive? Are workskills likely to drive or restrain competitiveness in the future?
- Is the national workskill creation process superior to that of other countries? What features of the process can be improved?
- Have the triggers which link industries' needs and education and training priorities adapted to new needs?
- Do new entrants to the workforce bring a mix of conceptual, operational and learning skills? Is this mix more or less effective than that delivered by other countries?
- Is the value of existing skills being effectively maintained, and upgraded over time? Is the reskilling agenda fitted to the needs of the national skill base? Compared to other countries, to what extent are the skills of older workers a source of competitive value?

Has education and training reform addressed the social impacts of workplace reform more effectively than other countries?
How has the education and training system responded to the needs of the unemployed and those becoming skill redundant? How has the education and training system combined with industries to address skill troughs and skill deficits? Are these responses more or less effective than those of other nations?

- Are those completing qualifications more employable than those without?
- Does the education and training system assist workforce mobility, by responding to the needs of those whose skills have become redundant or require major adaptation?
- Does the education and training system recognise the existence of skill troughs? Are programs in place to minimise troughs and to assist those who become caught in various skill troughs to overcome this disadvantage?
- Has the education and training system managed to add competitive value to workskills and to address the social impacts of change, or have the supply priorities become skewed?

Copyright PMS 1997.

Exhibit 5.1: A Framework for the Comparative Evaluation of education and training Reform Across Countries and Regions (Page 2/3)

Are the resources and delivery structures used by the education and training system better able to address new competitive priorities than the systems utilised by other countries?

- To what extent is the volume of resources sufficient to maintain and improve existing qualification profiles, given the population changes facing a particular nation?
- Is delivery organised to optimise the cost-effectiveness of education and training to education and training institutions, or to students, or to industries?
- To what extent is the resource allocation system able to address new, rather than old, needs, including: the changing balance of priorities between education and training sectors and institutions; and the changing priorities of students and industries, rather than the preferences of institutions?
- To what extent is the education and training system able to respond to the impact of shifts in industry mix and growth in labour market demand for qualifications? Are these shifts understood? Are they part of planning processes? To what extent are systemic factors likely to block responses to such shifts?
- Is delivery and resource allocation devolved to maximise flexibility and minimise cycle time? Have accreditation and approvals processes been re-engineered to cut cycle time and improve effectiveness?

Has the labour market adjusted to deliver the flexibility and cost-effective workskills required by industries to compete with industries based in other countries?
How has the labour market responded to changes in competitiveness and workskill requirements? Do these responses add or subtract value from the workskill creation process? How do these labour market responses compare with the responses of other nations? Is the labour market a source of competitive advantage for industries and individuals?

- To what extent does the labour market respond to new skill needs?
- Does the labour market send the most effective signals to students and employers?
- Are those with qualifications more employable than those without? Do those with qualifications earn higher premiums in the labour market than those without?

Has education and training reform evolved beyond the stage of discontinuous change to a system capable of ongoing evaluation and improvement? Is this system likely to outperform the improvement systems used by other nations?
How have the objectives of education and training reform been defined and evaluated? Have processes of continuous improvement been developed: to benchmark improvements; to evaluate the implementation of change; and to monitor continuously in order to learn from the successes and failures of competitors? Are these improvement processes more or less effective than those of other countries? How might they be improved?

- Is the impact on cycle time evaluated? Has the cycle time mismatch between education and training and key industries been bridged effectively?
- Is the impact on competitiveness evaluated?
- Are continuous improvement processes established? Are they effective? Is the focus on outcomes or processes? Is the focus internal or external?

Copyright PMS 1997.

Exhibit 5.1: A Framework for the Comparative Evaluation of education and training Reform Across Countries and Regions (Page 3/3)

Is the country's ranking on qualification stocks a source of competitive advantage?
Is the qualification profile ranking a driver or a restraint on competitiveness? Are profile rankings competitive? Is the mix of qualifications offered at each level competitive? Are the processes which translate qualifications into competitiveness more or less effective than those in benchmark countries?

- Are current profile stocks competitive at each of the three levels analysed? (Post-compulsory / Post-secondary / Degree)
- Are growth projections for the qualification stocks likely to improve, maintain, or reduce the overall ranking with other countries? (Post-compulsory / Post-secondary / Degree)
- Are the processes which translate qualifications into competitiveness more or less effective than those in other benchmark countries?
- To what extent does the mix and relevance of qualifications deliver strategic skill needs? Have the education and training system and employers adapted to optimise workvalue by integrating, rather than segmenting, the delivery of each of the three aspects of knowledge: concepts; operationalization; and the capacity for ongoing learning?
- Has a national skills framework been developed? Is it a source of competitive advantage compared to other countries?

  Does the framework address the links with other national and international frameworks effectively?

  Can the framework be applied to skills developed in the workplace, as well as in formal qualifications?

  Does the framework address the twin needs to deliver core skills and to allow competitive flexibility at the enterprise level?

  To what extent is credit available between programs to facilitate ongoing education and training? How does the skill framework contribute to the credit process?

Is the education and training system more responsive to changing national needs than the systems used by other nations?
Has the nation exploited mass secondary and post-secondary education more effectively than its competitors? Has the cycle time between the identification of new education and training needs and the responses delivered to the workforce increased or decreased? Has the cycle time mismatch between industries and education and training been bridged?

- Has the interface between schools, non university and university sectors adapted to the new needs created by mass school and post-school education?
- Has the education and training system altered volume and qualification levels and mix to address future needs and the actions of competitors?
- Have education and training institutions servicing each qualification level adapted to the changing needs for ongoing education and training? (Post-compulsory / Post-secondary / Degree)
- Are regulatory and skill frameworks a focus for inertia or a focus for improvement?

Copyright PMS 1997.

Exhibit 5.1: A Framework for the Comparative Evaluation of Education and Training Reform Across Countries and Regions summarises key questions which can be used to guide an evaluation of education and training systems.

A key to monitoring progress, identifying gaps, and ensuring that the system can manage ongoing improvement is to focus on employment qualification profiles, and then to link the profiles to industry competitiveness on the one hand and to education and training enrolments, resources, and curricula on the other. Workskill planning and evaluation provides a means of focusing on qualification and skill profiles and on managing ongoing changes. Benchmarking key strategic gaps and developing strategies which enable gap closing is central to developing an ongoing improvement capacity in the workskill system. Enabling strategies need to address the deregulation required to resource solutions and to reduce cycle time.

Both external and internal benchmarking can be used to focus the system on improvement opportunities. External benchmarks need to address the reality that education and training reform and industry reform are occurring in many countries. Simply introducing reform will not lead to improved competitiveness. National profiles need to be compared. Cycle times to respond to new needs also need to be compared.

Internal benchmarks can address internal processes. Differences between industries and States are readily identified. Some seem to be more directly linked to competitiveness than others. The challenge is to analyse differences and to identify gaps which, if closed, are likely to add to industry competitiveness, and then to develop strategies to implement change rapidly and at the grass roots of the system. Effective change should close gaps and generate noticeable impacts in terms of industry competitiveness.

The analysis of external and internal benchmarks and the identification of options for improvement will be the focus of later Reports.

Questions to guide a further examination of external and internal benchmarks for competitive workskills in Australia

External benchmarking

Are Australian workforce qualification profiles competitive with those of overseas benchmark countries? Is the Australian position likely to improve or deteriorate in relative terms? What are the likely impacts of relative shifts in Australian qualification profiles on national competitiveness? Are particular industries at risk?

> Is the growth in education and training sufficient to retain and improve the relative position of the Australian workforce?
>
> Are there links between differences in qualification profiles and industry competitiveness between countries?
>
> Can competitiveness be increased by more education and training, by more relevant education and training, or by altering education and training priorities to meet industry needs more effectively?

What is the likely impact of changing industry mix and competitiveness on qualification profiles in Australia and in other benchmark countries?

Are some countries, relative to others, altering education and training priorities more effectively to address emerging industry needs? Where are the key blockages? What are the most effective adjustment mechanisms?

Internal benchmarking

What are the current and projected qualification trends for the Australian workforce? Are the needs of key industries being met? Are workskills a likely source of competitive advantage or disadvantage? What skill bottlenecks might emerge, by State and industry, over the next decade and how can they be managed? What effect is the growing skills gap, between new entrants to the workforce and more experienced members of the workforce, likely to have on the national skills pool and on national competitiveness?

What are the current and projected differences in qualification profiles by industry and State? What is the impact on education and training needs of different employment growth and industry mix shifts between States?

What are the employment demand and education and resource share implications of these differences?

Is the education and training system responding effectively to changing industry needs? What is required to make more effective use of existing resources?

For key industries, what State profile gaps can be identified? Are these gaps critical to State competitiveness? Are State gaps projected to increase or decrease in the future? What are the options for gap closing suggested by this analysis?

How is the education and training mix changing in countries with rapidly ageing workforces? What strategic threats and opportunities does this offer Australia with a relatively younger workforce?